

ABSTRACT

An implantable stent having surface features adapted to promote an organized growth pattern of infiltrating cells when implanted in a tubular organ is provided. The surface features comprise depressions, pores, projections, pleats, channels or grooves in the stent body and are designed to increase turbulence or stagnation in the flow of a liquid, such as blood through the stent, and/or to promote the growth of infiltrating cells in an organized pattern. Alternatively, the invention stent can be populated with living cells prior to implant and can be heatable from an external source of energy, thereby inducing production of therapeutic bioactive agents from ingrowing cells. The invention also provides an implantable heatable stent for transcutaneously monitoring the flow of fluid through a lumen into which the stent is implanted by measuring the rate at which the heated stent cools in response to blood flow when the source of heat is removed.